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26883
Intake
Case Studies
J.R. Whiting

Mr Roy Schrameck
Surface Water Quality Supervisor
Michigan Department of Natural Resources
38980 7 Mile Road
Livonia, MI 48152

Dear Mr Schrameck

The 1991 annual report describing the performance of the deterrent net system at the JRWhiting Plant is enclosed. This report fulfills the requirement of Order No 2010 and demonstrates that a deterrent net system continues to be the best technology available for minimizing environmental impact at the JRWhiting Plant.

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I. INTRODUCTION

The Water Resources Commission (WRC) Final Order No 2010 issued on July 19, 1982 requires the installation of a deterrent net as the best technology available to minimize environmental impact at the J R Whiting Plant. The order also required monitoring, verification and reporting of deterrent net performance which began in October 1982.

Based on the demonstrated and reported performance of the deterrent net since 1982, the Commission has found that the deterrent net continues to be the best technology available for minimizing environmental impact at J R Whiting. This 1991 annual report of J R Whiting deterrent net performance covers the period from January 1991 through December 30, 1991.

II. FISH IMPINGEMENT AND DETERRENT NET EFFECTIVENESS - 1991

A. 1991 Impingement Results

The estimated total number and weight of all species collected by month during 1991 are presented in Tables 1 and 2. The estimated total number impinged for 1991 was 316,575, weighing approximately 6,120 kg.

B. Comparisons of Annual Estimated Impingement

The comparison of 1991 estimated impingement to annual estimates from 1978 to 1991 is shown in Figure 1. The consistent reduction in fish impingement with net in operation compared to no deterrent net was again exemplified by 1991 deterrent net performance.

III. SUMMARY OF SURFACE INSPECTION -1991

Daily surface inspections were completed by Plant operations staff throughout 1991 and the daily results have been reported with each monthly report. The daily surface inspections document whether the net is at the water surface, any damage to the net, if the net is stained, or if there is debris on the net. Net strain and debris were the most common observations during 1991 and served as an indicator for net maintenance.

TABLE 1
J R Whiting Plant
Monthly Fish Impingement Summary
January-December 1991
(Total Numbers)

<u>Species</u>	<u>Jan</u>	<u>Feb</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Gizzard Shad	104,346	61,200	275	153	18	37	240	248	1,680	2,216	110,040	19,800	300,253
Yellow Perch	11	5	343	75	10	0	0	0	3	16	30	22	515
Shiners	26	0	25	51	11	3	0	1	6	9	137	85	354
Freshwater Drum	144	105	302	122	45	9	24	21	1,039	1,564	561	318	4,254
White Bass	25	12	15	5	2	1	69	92	217	196	26	26	686
Carp/Goldfish	48	16	23	17	9	4	2	1	2	15	49	219	405
Channel Catfish	3	2	15	16	9	14	21	42	234	159	37	26	578
White Perch	243	26	8	4	1	1	5	44	119	6,462	1,519	266	8,698
Crappie	3	0	0	4	9	0	1	0	20	0	1	20	58
Other Sunfish	8	1	10	22	7	4	3	3	7	71	94	165	395
Bullhead Sp	0	0	6	3	2	4	0	0	1	0	2	3	21
Walleye	0	0	0	0	0	0	0	0	1	0	0	1	2
Other	23	3	49	41	40	7	0	4	8	39	85	49	356
Total	104,880	61,370	1,071	513	163	87	365	456	3,337	10,747	112,581	21,000	316,575

TABLE 2
J R Whiting Plant
Monthly Fish Impingement Summary
January-December 1991
Total Weight (kg)

Species	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Gizzard Shad	2,046	1,199	5.4	3.0	0.4	4.6	3.0	3.2	21	27.7	1,834	330	5477
Yellow Perch	0.1	0.1	3.0	1.2	0.2	0	0	0	0.2	0.3	1.1	0.7	7
Shiners	0.3	0	0.1	0.4	0.1	0.1	0	0	0.1	0.1	0.9	0.8	3
Freshwater Drum	13	4	7.0	5.2	3.0	1.0	0.6	1.6	44.5	78.5	32.3	22.0	213
White Bass	0.4	0.4	0.8	0.1	0.4	0.1	0.3	0.7	1.7	2.4	1.1	1.8	11
Carp/Goldfish	2.3	0.6	0.7	1.2	3.3	1.8	0.6	0.1	0.1	1.3	4.0	11	27
Channel Catfish	1.0	0.1	0.1	0.4	0.1	1.2	0.3	0.4	2.1	1.5	0.9	0.3	9
White Perch	2.2	0.1	0.1	0.1	0	0	0.1	0.3	0.8	48.6	13.6	1.8	68
Crapple	0	0	0	1.2	2.3	0	0.1	0	2.3	0	0.5	0.5	7
Other Sunfish	0.7	0	0.4	0.6	0.2	0.5	0.1	0	0.4	0.7	1.7	2.9	8
Bullhead Sp	0	0	0.3	0.1	0.4	0.6	0	0	0.1	0	0.2	0.6	2
Walleye	0	0	0	0	0	0	0	0	0.1	0	0	0.1	1
Other	1.2	0.2	1.7	3.2	8.2	0.95	0	1.5	0.9	1.1	4.1	2.0	25
Total	2,070	1,222	17	17	19	13	4.7	7.8	63	231	2,053	402	~6,120 kg

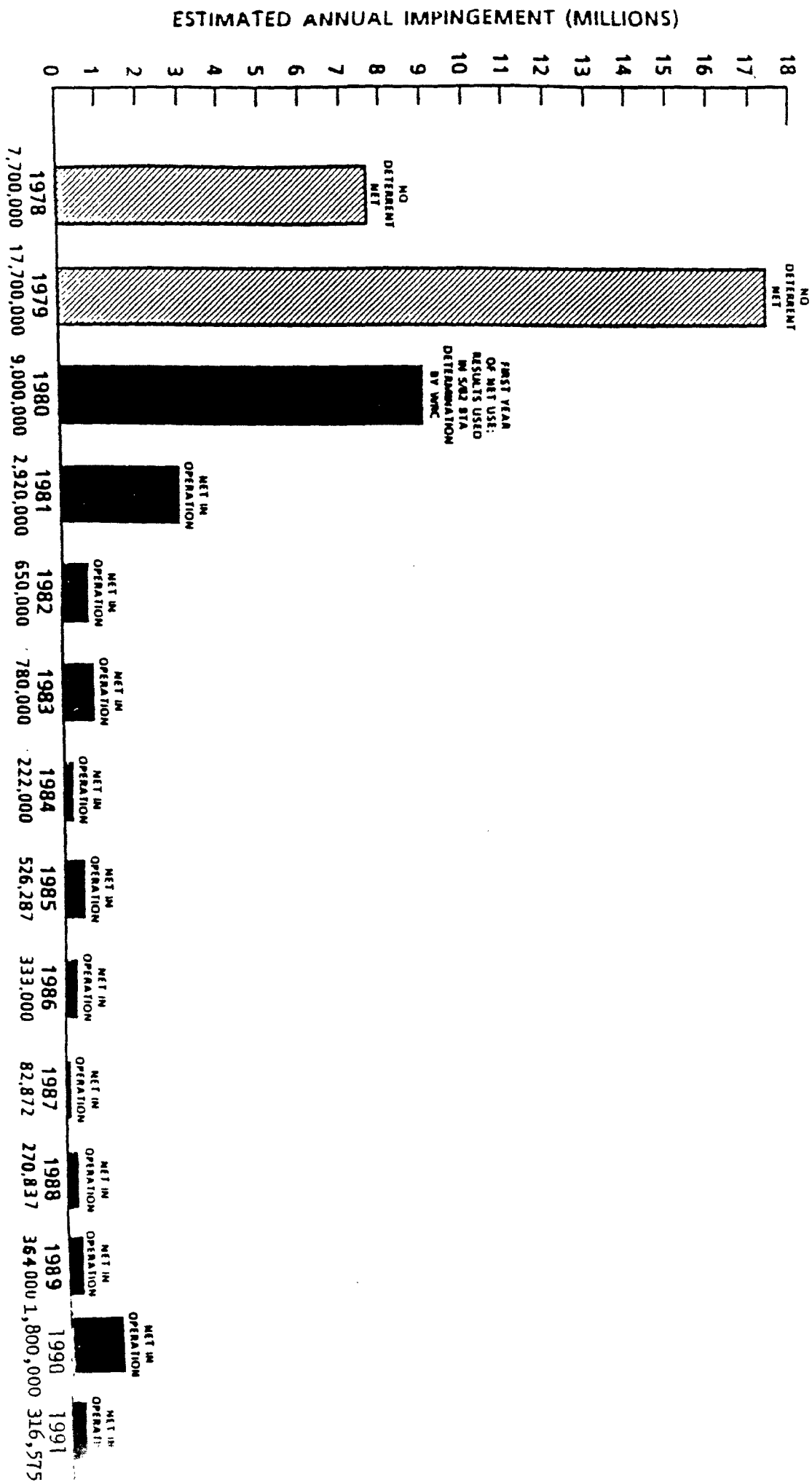


FIGURE 1 ESTIMATED ANNUAL FISH IMPINGEMENT OF ALL SPECIES AT
CONSUMERS POWER COMPANY'S J.R. WHITING PLANT, 1978-1991